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FIG. 1

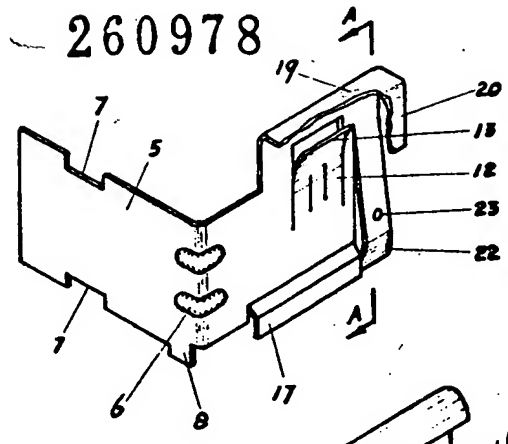


FIG. 2

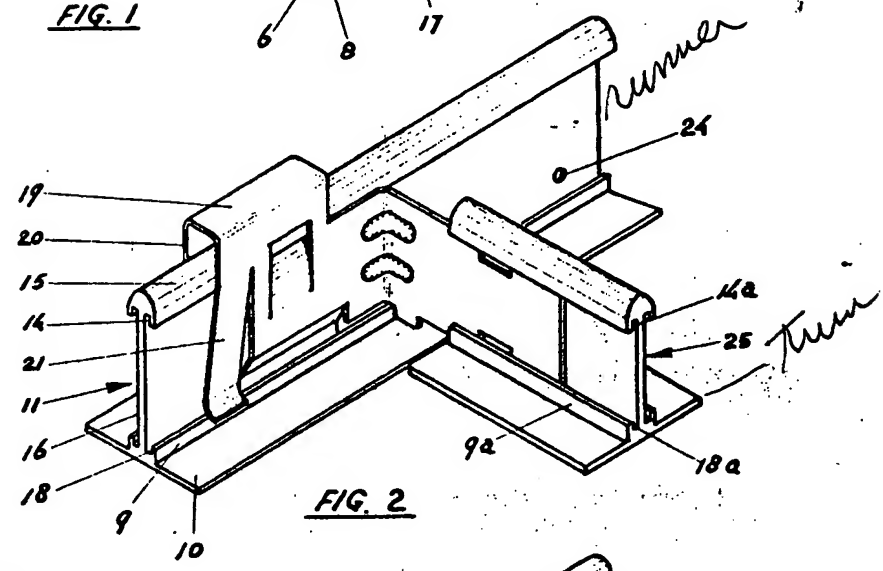


FIG. 3

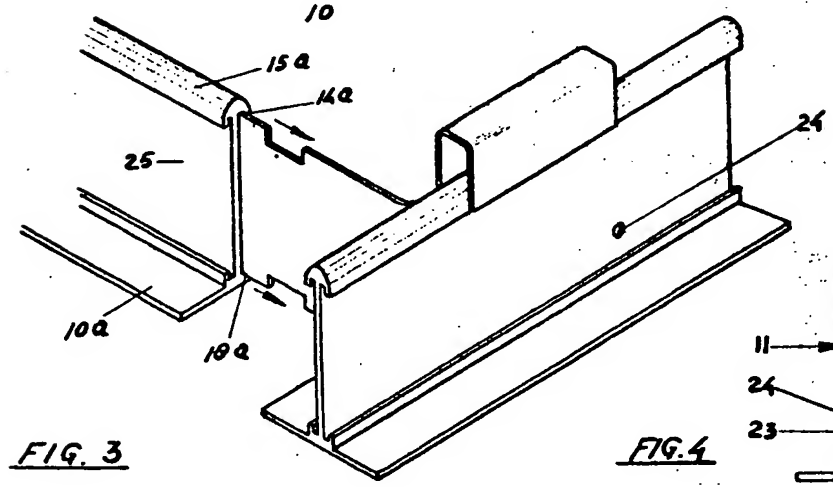
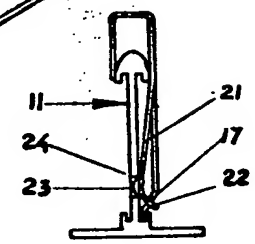


FIG. 4



22 350

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10,127/61



COMMONWEALTH OF AUSTRALIA

PATENT SPECIFICATION

		Class	Int. Cl.
Application Number	10,127/61.	81.4; 81.3;	E04b; E04c.
Lodged	11th October, 1961.	78.9.	

Complete Specification

Entitled

A NEW AND IMPROVED JUNCTION BRACKET FOR JOINING CEILING SUSPENSION MEMBERS.

Lodged	11th October, 1961.
Accepted	4th August, 1965.
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Convention Priority 31st August, 1961, New Zealand, 130100.

Applicant MILTON OSWALD HEMMING.

Actual Inventor MILTON OSWALD HEMMING.

Related Art:	10,126/61	81.4; 81.3; 78.9.
	211,577(20,716/56)	81.4.
	236,995(40,014/58)	81.4.

The following statement is a full description of this invention, including the best method of performing it known to me :

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This invention relates to a new and improved junction bracket for joining ceiling suspension members.

Prior to the present invention, the attachment of transverse rails or runners to the main suspension members so that a network of members to form the suspension system can be built up, was a difficult and time consuming task. These transverse rails were usually bolted to the main runners in situ, such an operation requiring the requisite number of tools and being very awkward to carry out especially when fairly long lengths of the rails or runners were being dealt with. It is manifest therefore, that a means should be provided which will enable the transverse rails to be clipped or otherwise attached to the main suspension members without the necessity of using tools or other equipment and that once the rails have been so attached that they will be securely locked onto at least one main suspension member and yet easily removable at will.

It is therefore an object of this invention to provide a bracket which is attachable to the main suspension member and to which a transverse rail can be attached.

It is also an object of this invention to provide means whereby the transverse rails may be attached to the main suspension members in predetermined positions.

According to the present invention there is provided a junction bracket for joining together a main suspension member and a transverse rail of a suspended ceiling system, wherein the junction bracket is formed to clip over and be retained on an elongate main suspension

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member, the said junction bracket having a rail supporting arm which, when in position on the main suspension member, projects at an angle to the said main suspension member and which is formed to receive and retain one end of a transverse rail, the bracket being so arranged that a transverse rail supported thereby from the suspension member is located to one side of the

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suspension member in a manner such that the bottom surface of the transverse rail and main suspension member are co-planar.

5 In the present invention the suspension framework utilizes a standard form of suspension member which is an extruded metal of an inverted T section, this member having therefore an upstanding flange and two lower horizontal flanges to which the tiles may be attached. The transverse rails are of the same section as the main suspension members and are attached to such main members in a manner that the lower face of the flanges of the members are plane, thereby permitting the direct attachment of the tiles to such flanges should it be necessary.

10 The invention will now be described with the aid of the accompanying drawings in which:-

Figure 1 is a view of the junction bracket.

Figure 2 is a view of the bracket in position on a main suspension member with a transverse rail attached to such bracket.

20 Figure 3 is a view similar to Figure 2 but looked at from the other side of the main suspension member with the transverse rail partly in position.

Figure 4 is a section along the line A-A of Figure 1 but with the bracket fitted about a main suspension member.

25 Referring to the drawings, the junction bracket which is preferably formed from a strong metal, has a rail supporting arm 5 which projects at right angles from the main body of the bracket, the angled portion being strengthened by fillets 6 or the like. The rail supporting arm has upper and lower slots 7 for the purpose to be hereinafter described, the said arm also having a depending lug 8 which acts as a stop means to bear against the



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longitudinal wall 9 on the horizontal flange 10 of the main suspension member 11 and so locate the bracket against such member. The main body of the bracket is provided with a pawl 12 which may conveniently be formed by a stamping, pressing or the like, this pawl having an inturned edge 13 which will engage in a longitudinal groove 14 under an enlargement 15 formed on the top of the upstanding flange 16 of the main suspension member. The lower end of the main body of the bracket has a keyed portion 17 which as can be seen from the drawings stands slightly proud of the remainder of the body so as to engage in a lower longitudinal groove 18 formed in the base of the horizontal flange 10 of the main suspension member. The top of the bracket is formed into a cowl 19 which extends over the enlargement 15 of the main suspension member with the downturned wall 20 of the cowl spaced from the main body of the bracket a sufficient distance to enable the cowl to be sprung over the said enlargement. A finger 21 which is formed in the main body of the bracket will normally project from such body at a slight angle as can be seen in the Figures, the lower end of the finger being given a backward twist as at 22 to facilitate the insertion or engagement of the bracket over the main suspension member. On this finger a small projection 23 which may be in the form of an indentation in the reverse side of the finger, engages in a complementary hole 24 which is formed at intervals in the main suspension member to give a positive longitudinal positioning of the bracket in predetermined positions on the main suspension member.

In operation the main suspension members 11 are

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suspended from the ceiling proper by any convenient and suitable means, these members being spaced apart the required distance. At the position where the transverse rail or rails are to extend from the main suspension member a junction bracket is clipped over such member in a manner that the keyed portion 17 will enter into the groove 18 and so that the pawl 12 will spring under the enlargement 15 and into the groove 14 thereunder. At the same time the cowl will clip over the enlargement and the stop lug 8 will bear against the wall 9 so that the bracket will be firmly held against the main suspension member with the rail supporting arm extending from such member at right angles. The bracket may then be moved longitudinally along the main suspension member until the projection 23 of the finger 21 will spring into a previously formed hole 24 in the said member to ensure that the bracket is in a correct longitudinal position thereon. These holes 24 which are formed in the member are spaced apart at a modular distance of for instance, one foot, to facilitate the alignment of the brackets and so of the transverse rails.

The transverse rail indicated by the reference 25 in the figures which may also be of an inverted T section similar to the main suspension member, is engaged on the rail supporting arm by entering the said arm into the grooves 14a and 18a so that the rail may be moved in the direction indicated by the arrows in Figure 2 until the horizontal flange 10a of the rail contacts the flange 10 of the main suspension member. At this point the enlargement 15a and the wall 9a of the transverse rail may be crimped slightly or otherwise deformed so as to partly

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enter into the respective upper and lower slots 7 of the rail supporting arm to lock the said rail to the arm.

If desired the rails may be further secured to the supporting arm for instance by bolts or the like passing through
5 holes drilled in the two members or any other suitable fastening means may be employed.

The remainder of the junction brackets may then
be similarly engaged on the main suspension members at the
correct places and the transverse rails attached to the
10 brackets to complete the suspension system.

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THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

~~WHAT I CLAIM IS:~~

1. A junction bracket for joining together a main suspension member and a transverse rail of a suspended ceiling suspension system, wherein the junction bracket is formed to clip over and be retained on an elongate main suspension member, the said junction bracket having a rail supporting arm which, when in position on the main suspension member, projects at an angle to the said main suspension member and which is formed to receive and retain one end of a transverse rail, the bracket being so arranged that a transverse rail supported thereby from the suspension member is located to one side of the suspension member in a manner such that the bottom surface of the transverse rail and main suspension member are co-planar.
(31st August 1961)
2. The junction bracket as claimed in claim 1, consisting of a main body which is formed to clip over the main suspension member and a rail supporting arm which projects at an angle to the said main body.
(31st August 1961)
3. The junction bracket as claimed in claim 1 or in claim 2, wherein a pawl is formed in the junction bracket to engage under a longitudinal enlargement formed on an upstanding flange of the main suspension member.
(31st August 1961)
4. The junction bracket as claimed in claim 2 or in claim 3 for use with a grooved main suspension member, wherein the lower end of the main body has a keyed portion to enter the groove provided in the main suspension member.
(31st August 1961)
5. The junction bracket as claimed in any one of the preceding claims 2 to 4 inclusive, wherein a finger which projects from the said main body has means to enable preset longitudinal positioning of the bracket on the said main suspension member.
(31st August 1961)



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6. The junction bracket as claimed in claim 5, wherein the means to enable preset longitudinal positioning of the bracket in the said main suspension member comprises a projection formed on the finger to enter a complementary hole in the main suspension member.

(31st August, 1961)

7. The junction bracket as claimed in claim 5 or in claim 6, wherein the said finger projects from the body of the bracket at a slight angle.

(31st August, 1961)

8. The junction bracket as claimed in any one of the preceding claims, wherein in order that the junction bracket will clip over and be retained on the main suspension member, the top of the bracket is formed into a cowl to engage over the top of the main suspension member.

(31st August, 1961)

9. The junction bracket as claimed in any one of the preceding claims, wherein stop means formed on the bracket locate the bracket against the main suspension member.

(31st August, 1961)

10. The junction bracket as claimed in claim 9, wherein the stop means is in the form of a lug projecting from the bracket.

(31st August, 1961)

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11. The junction bracket as claimed in any one of the preceding claims wherein one or more slots is or are formed in the rail supporting arm into the or each of which slots a portion of transverse rail is engaged in order to retain the transverse rail on the rail supporting arm.

(31st August, 1961.)

12. The junction bracket as claimed in any one of the preceding claims 1 to 10 inclusive, wherein the transverse rail is retained on the rail supporting arm by means of a bolt or bolts passing through the said transverse rail and said rail supporting arm.

(31st August, 1961.)

13. The junction bracket for joining together a main suspension member and a transverse rail of a suspended ceiling suspension system as herein described with reference to the accompanying drawings.

(31st August, 1961.)

DATED this 2nd day of August, 1965.

MILTON OSWALD EMMING
By his Patent Attorneys

T. G. ABERNETHY & CO.

T. G. Abem
(T. G. Abem)

Fellow Institute of Patent
Attorneys of Australia

